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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,733	02/13/2002	Theodore Clark Brown	20-LC-120409 (330)	6371

29391 7590 05/21/2003

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EXAMINER

NGUYEN, XUAN LAN T

ART UNIT

PAPER NUMBER

3683

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/074,733

Applicant(s)

BROWN ET AL.

Examiner

Lan Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "2".
2. The drawings are further objected because:
  - In figure 3, turning vane member "26" lacks one corner member "32". Furthermore, all members "32" are illustrated differently from each other while the specification calls for them to be the same. This is very confusing as to the exact structure of said corner members.
3. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

4. The disclosure is objected to because of the following informalities: on page 6, line 15, "30 and 32" need to be -- 34 and 36--, respectively.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Line 4 of claim 1, "a fan" and "a resistor stack" should be --the fan-- and --the resistor stack--, respectively.

7. Claims 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Lines 1-2 of claim 10 states "the further flow directing diffuser comprises". It is believed that it should be -- the flow directing diffuser further comprises --; so that it would clearly establish its antecedence basis with the above mentioned flow directing diffuser in claim 8.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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9. Claims 1, 2, 3, 5-8, 10, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Guntner.

Re: claim 1, Guntner shows an apparatus, as in the present invention, comprising: a fan 4, a locomotive dynamic braking grid stack 6, a flowing vane 3, 9A, 2, 1 disposed in a flow of cooling air downstream of said fan and upstream of said resistor stack, the flow turning vane oriented within the flow of cooling air to direct a portion of the cooling air from a relatively higher velocity portion of the flow of cooling air into a relatively lower velocity portion of the flow of cooling air, as shown in figure 3.

Re: claim 2, figure 3 shows vane 3 to be an annular member having decreasing diameters to direct the flow into the center.

Re: claims 3, 5 and 6, figure 3 further shows duct 9, 8 and 7, first flow turning vane 3 and second flow turning vane 9A wherein 9A directs the flow into the corners, as shown in figure 3; and the corner member, the duct and the annular member are connected to each other.

Re: claim 7, figure 3 shows a first flow turning vane 3 and second turning vane 1B disposed in series of each other upstream of the stack.

Re: claim 8, Guntner shows a cooling apparatus for a locomotive dynamic brake resistor grid stack as in the present invention, the cooling apparatus comprising: a fan 4 for inducing a flow of air having a cross-section with a relatively higher velocity area and a relatively lower velocity area; a duct 9, 8, 7 for directing the flow of air away from the fan to an inlet of a locomotive dynamic brake resistor grid stack 6; and a flow directing diffuser 3 disposed within the duct for directing a portion of the flow of air from

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the relatively higher velocity area into the relatively lower velocity area to at least partially normalize a flow velocity distribution of the air entering the inlet of the grid stack.

Re: claim 10, Guntner further shows said flow directing diffuser comprises a first annular flow directing vane 3 disposed within the duct for directing a portion of the flow of air from a relatively higher velocity annular area to a relatively lower velocity center area of the duct.

Re: claim 12, figure 3 further shows a corner vane 9A disposed within the duct wherein 9A directs the flow into the corners, as shown in figure 3.

Re: claim 13, Guntner show a locomotive dynamic braking grid package, as in the present invention, comprising: a plurality of electrical resistors packaged in a grid stack 6; a fan 4 for producing a flow of cooling air; a duct 9, 8, 7 for directing the flow of cooling air from the fan to the grid stack for cooling the plurality of electrical resistors; and a flow turning vane 3 disposed within the duct for directing a portion of the cooling air from a higher axial velocity area into a lower axial velocity area of the duct to at least partially normalize an axial flow velocity profile of the cooling air as it enters the grid stack, as shown in figure 3.

10. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by pages 1 and 2 of paper A3 submitted by the Applicant.

Pages 1 and 2 of paper A3 submitted by the Applicant, show that a mixed flow fan is often used in a locomotive dynamic braking grid package, as in the present invention, comprising: a plurality of electrical resistors packaged in a grid stack; a

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mixed flow fan for producing a flow of cooling air; and a duct (inherent in a resistor brake system) for directing the flow of cooling air from the fan to the grid stack for cooling the plurality of electrical resistors.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guntner in view of Presz, Jr. et al.

Guntner's apparatus, as rejected in claim 1, lacks the V-shaped corner member. Presz, Jr. teaches a diffuser with corner members in figure 4 and the arrangement of such diffuser in an existing duct as in figure 26 for directing fluid flow into the corners of a square duct. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Guntner's apparatus with a diffuser having corner members as taught by Presz, Jr. in order to increase the distribution of the air from a round duct to a square duct as taught by Presz, Jr.

13. Claims 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guntner in view of pages 1 and 2 of paper A3 submitted by the Applicant.

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Guntner's apparatus, as rejected in claims 8 and 13, is silent of the type of fan being used. Pages 1 and 2 of paper A3, submitted by the Applicant, shows a mixed flow fan for use in cooling a resistor stack. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed a mixed flow fan as taught by paper A3; since mixed flow fans are old and well-known as the type of fans being used for cooling a resistor stack due to its ability to offer high flow.

14. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guntner in view of pages 1 and 2 of paper A3 submitted by the Applicant.

Re: claim 15, Guntner shows a locomotive dynamic braking grid package, as in the present invention, comprising: a plurality of electrical resistors packaged in a grid stack 6; a fan 4 for producing a flow of cooling air; and a duct 9, 8, 7 for directing the flow of cooling air from the fan to the grid stack for cooling the plurality of electrical resistors. Guntner is silent of the type of fan being used. Pages 1 and 2 of paper A3, submitted by the Applicant, shows a mixed flow fan for use in cooling a resistor stack. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed a mixed flow fan as taught by paper A3; since mixed flow fans are old and well-known as the type of fans being used for cooling a resistor stack due to its ability to offer high flow.

Re: claims 16 and 17, Guntner further shows in figure 3, annular flow turning vane 3 and corner member 9A.

15. Claims 11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guntner.



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Guntner's apparatus, as rejected in claims 10 and 15, lacks a second annular flow directing vane to cooperate with said first vane. The Examiner takes an Official Notice that having multiple or repeating elements is an old and well-known concept. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Guntner's apparatus with a second annular flow directing vane to cooperate with said first vane to increase the flow directing capability of the assembly, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sheoran et al., Kim et al. and Everitt show cooling equipments.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Nguyen whose telephone number is 703-308-8347. The examiner can normally be reached on M-F, 9 to 5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-4177.

XLN

XLN  
May 15, 2003

  
JACK LAVINDER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600